REMARKS

Claims 1-42 are currently rejected. Applicant has amended Claims 1-2, 4, 9, 11-12, 14, 17, 19, 21, 29, 31-32, 35, 37, and 42. Applicant has also canceled Claims 6-7. Support for the amendments to Claim 1 can be found, for example, in prior Claims 6-7, in paras. [0091] and [0097] of the substitute specification, and throughout. Support for the amendments to Claims 2, 4, 12, 14, and 21, can be found, for example, in Claims 31-33, in para. [0064] and [0098], and throughout. Support for the amendments to Claims 9, 19, 29, can be found, for example, in Claim 35 and throughout. Support for the amendments to Claim 11 can be found, for example, in Claims 8 and 18, in para. [0092] and [0098], and throughout. Support for the amendments to Claim 17 can be found, for example, in Claim 1 and throughout. Support for the amendments to Claim 31 can be found, for example, in Claim 1 and throughout. Support for the amendments to Claim 32 can be found, for example, in Claim 8 and throughout. Support for the amendments to Claims 35 and 37 can be found, for example, in prior Claims 6-7, in paras. [0091] and [0097], and throughout. Support for the amendments to Claim 42 can be found, for example, in Claims 31-33, and throughout. Claims 5, 8, 10, 15-16, 18, 23-24, 26, 28, and 34, have also been amended to either correct a minor scriber's error or to align claim language. Support for the amendments to these claims can be found in the claims themselves or in their corresponding independent or intermediate claims.

Applicant submits that these amendments and corrections herein are made without prejudice as to patentability, including the doctrine of equivalents, and not to overcome prior art, and that no new matter has been added. Applicant also submits a Request for Continued Examination (RCE) the required fee of $395 for a small entity. The Commissioner is authorized to charge any additional fees and to credit any refunds to the deposit account of Bracewell & Giuliani, LLP, deposit account no. 50-0259, attorney docket no. 027299.000002.

Claims 1-42 are Novel and Nonobvious

The Examiner has rejected Claims 26-30 under U.S.C. § 103(a) as being unpatentable over U.S. Patent No. 6,657,552 by Belski et al. (Belski) in view of U.S. Patent No. 7,061,924 by Durrant et al. (Durrant); and has rejected Claims 1-5, 7-15, and 17-20, as being unpatentable over

Belski in view of U.S. Patent No. 6,731,223 by Partyka et al. (Partyka); Claims 6-7, and 16-17, as being unpatentable over Belski in view of Partyka and further in view of U.S. Patent No. 3,806,875 by Georget (Georget); Claims 26, 27-30, 31-32, 35, 37-42, as being unpatentable by analogy with respect to the subject matter disclosed in Claims 1-20; Claims 21-23 as being unpatentable over Belski in view of U.S. Patent No. 6,333,975 by Burnn et al. (Burnn); Claims 24 and 25 as being unpatentable over Belski in view of Burnn and further in view of Partyka and further in view of Georget; and Claims 33-34 as being unpatentable over Belski in view of Partyka and further in view of U.S. Patent No. 4,811,011 by Sollinger (Sollinger). Applicant respectfully traverses the rejection.

Claimed Embodiments of the Present Invention

As perhaps best shown in FIG. 2, the various claimed embodiments of the present invention feature a distributed network system (30) providing service to multiple customers and includes, at each customer location (40), one or more utility meters (72), (74), etc., a sensor interfaced with each meter, and a meter data collector or residential control unit (41) in communication with the sensor, and functioning as a communication node of the network system (30). The system (30) can also include a remote automatic meter reading control center including a host computer (61), e.g., a server, for gathering and processing the usage reading data. The system (30) can also include system software associated with the host computer (61) which can include network software having a network protocol, e.g., a preselected application layer protocol, to communicate over a network connected to each of the meter data collectors (41). The network software is capable of querying or polling each meter data collector (41) to determine a preferred polling or communication route between the host computer (61) and each of the meter data collectors (41) typically from among multiple potential communication routes. The determination can be based on signal strength between individual meter data collectors (41), and optionally other factors. In response to polling by the host computer (61), in one configuration, the meter data collectors (41) transmit collected meter data in separate data packets along their respective preferred communication routes. In a configuration, a data packet containing the instructions can be sent back to the primary host (61) with the meter data in the payload replacing the instructions. In another configuration, the payload of the packet providing

the instructions can be used to contain or "rake" in the meter data from multiple meters along a predetermined preferred communication pathway. Field hosts (51) functioning either as routers or as data collectors (41) can extend the reach of the host computer (61) through the use of one or more conventional networks (80). In either of the above configurations, the system (30) can utilize inter-node frequency hopping after each meter data collector transmission to help ensure data packet transmission reliability.

The Cited Documents

As perhaps best shown in Belski FIG. 3 and in col. 6, lines 20-60, Belski describes, for example, a system which includes an interface device (E^{CDB} or CDB) that collects meter data from multiple meters (E, G, W) each having RF transmitters that can use a spread spectrum frequency-hopping algorithm to transmit their utility data to an interface device (E^{CDB} or CDB). *See* col. 5, lines 11-64. Notably, meters (E, G, W) do not communicate with each other. Nor do interface devices (E^{CDB} or CDB) communicate with each other. *See* FIG. 3 and col. 4, lines 52-64. Thus, Belski inherently *teaches away* from employment of a mesh network. A network server (NCS) allows additional modules (S) to communicate with the interface device (E^{CDB} or CDB) and may allow communication between the interface device (E^{CDB} or CDB) and end-users/service companies to a wide area network. The NCS, however, is not a field unit, which is described as capable of polling multiple remote collection units, nor is it described as in communication with a host computer other than through the interface device (E^{CDB} or CDB). Further, each interface device (E^{CDB} or CDB) transmits the received meter data via a "conventional" carrier wave or signal transmission device (e.g., telephone, digital or analog cellular, two-way paging, IP addressable Internet access, or broadband modems) to a master station associated with a utility. *See* col. 5, lines 22-31. I.e., they do not employ frequency hopping as part of their communication scheme back to the host utility. Still further, the utility or end-user computers are also not described as having an RF transceiver.

As shown in Durrant FIG. 2, Durrant discloses a monitoring system (200) including a network of monitoring devices (100) which can be established on an ad hoc basis. The network (200) can include intermediate devices (204) to relay data, and a central gateway (208) interfaced

with a WAN to relay the monitoring data to a network-based application (not shown) that resides on or is interfaced to the WAN. The transmitters for the monitoring devices (100) are capable of up to 100 milliwatts of transmit power and ranges of 100 meters. The IP (connectionless) protocol is the primary methodology of retrieving data according to the exemplary embodiment. A mobile ad hoc networking (MANET) protocol can be used to form a random, multi-hop graph or "ad hoc" network. As described in col. 5, line 66 to col. 6, line 9, Durrant discloses that gateway (208) maintains a routing table to each device (100) in its network in the form of a list or chain of IP addresses. Each non-gateway device (100), however, is only described as containing a routing table that contains the next-hop IP address that will lead back to the gateway (208). *See* col. 6, line 3-5. In other words, each device (100) maintains a list of other devices (100), (208) that are within transmission range (one-hop) of the respective device (100), rather than a complete route from the device (100) to the gateway (208). When the device (100) wishes to send data to the gateway (208), the device (100) requests each adjacent device (100) to try to send the data to the gateway (208), and those devices (100) request each adjacent device (100) to do so, and so on, until the data reaches the gateway (208). *See* col. 9, lines 10-28, and col. 7, lines 60-65 (indicating that during actual employment as opposed to network discovery, packet based communication, such as, TCP/IP is used). I.e., Durrant teaches implementations such that no dedicated path is employed. *See* col. 5, lines 40-43. As such, if a device (100) that is 2 hops away transmits its data and that data is received by more than one other device (100), the gateway (208) would receive duplicate data--the result being unnecessary network congestion.

Partyka, for example, describes a meshed telemetry system for transmitting alarm messages, which includes a plurality of telemetry systems (200-i) each including a corresponding plurality of telemetry collection units (231-i), which communicate with adjacent telemetry collection units (231-i) to form a mesh network-type configuration. See col. 6, lines 7-36. The telemetry collection units (231-i) route the alarm message according to a predetermined algorithm and according to a routing table that contains information about the number of hops and relative signal quality along the chosen message path. *See* col. 9, lines 4-27. The number of hops is indicated as being the number of retransmissions needed to reach a terminating telemetry collection unit (one in communication with a network interface unit). "Probes" are used to

determine an undisclosed composite signal quality along the entire message path. The transmission pathway from a telemetry collection unit (231-i) to a terminating telemetry collection unit (231-i) is indicated as being according to a "routing" transmission methodology whereby the telemetry collection units (231-i) route the message according to a predetermined algorithm and according to a routing table that contains information about the number of hops (retransmissions needed to reach the terminating telemetry collection unit (231-i)) and a composite quality along the *entire* message path. *See* col. 8, lines 44-56. The telemetry collection units (231-i) also have broadcast capability. Although not specifically teaching the *reverse*, Partyka indicates that the same methods of *transmission* (routed or broadcast) can be used to carry status request messages from a central monitoring facility (160) to a selected individual telemetry collection unit (231-i). *See* col. 9, lines 59-65. Each telemetry system (200-i) also includes a plurality of telemetry transmitters (221-i-i), each of which can communicate with one or more telemetry collection units (231-i), but not with other telemetry transmitters. *See* FIG. 2b and accompanying text. Each telemetry transmitter (221-i-i) can transmit an alarm condition for a predetermined number of times using a plurality of predetermined alarm frequencies such that the transmission frequency is changed after each single packet transmission according to a predetermined fixed sequence. *See* col. 11, line 50 to col. 12, line 12.

Nothing in Partyka provides a disclosure, teaching, or suggestion of the central monitoring facility (160) can actually employ the techniques taught by Partyka to either initiate discovery or to discover such respective route, much less those claimed by Applicant. Specifically, nothing in Partyka provides a disclosure, teaching, or suggestion that the central monitoring facility (160) can or should actually employ the pathway selection techniques employed by its individual collection units (231-i) to either initiate selection or to select a preferred communication sequence path, much less to do so based on strength of signal, as featured. Nor do those techniques employ the determination of a strength of communication signal between collection units, but rather some undefined composite signal quality. *See* col. 9, lines 7-16. Notably, col. 9, lines 16-19 then goes on to state that "[i]n operation, if the best path is not operative...an alternative path can be selected at each node of the network. Accordingly, Partyka also does not disclose, teach, or suggest utilizing strength of communication signal

between nodes in order to allow a preferred polling sequence route to vary over time. Apparently, complete signal failure is required as a prerequisite to re-establish a new communications. *See* col. 9, lines 16-19.

Georget, for example, describes a photoelectric type (contactless) optical reading device for optically reading a counting unit (meter quantity) and converting the meter quantity into electrical signals. *See, e.g.*, FIG. 1 and col. 1, line 51-col. 2, line 13. A central station (60) is provided which is electrically connected to multiple local meter interrogation stations (TR) of a remote reading apparatus, connected in cascade. *See* FIG. 1 and col. 2, line 51-col. 3, line 17. *Id.* That is, central station (60) provides a triggering signal which causes a cascade of counting unit reads along the length of the single cascaded electrical circuit. *See also*, col. 8, lines 36-43. Notably, such sequential reading is not that of an autosequencer as disclosed in the subject application.

Brunn, for example, describes a system including a plurality of utility meters equipped with intelligent external modems and a plurality of relays in communication with a plurality of modem hubs for relaying data through a PSTN telephone network to a workstation. Each of the modems (14), relays (16), and hubs (18) can include a high-power transceiver, respectively.

Sollinger, for example, describes a utility meter reading and monitoring system including a plurality of scanners (4, 8, 9) each able to optically scan a corresponding plurality of utility meters (sensors) (1a-1e, 2a-2e), a microcomputer (5) in wireline electrical communication therewith, and a telephone communication interface (10) to provide the meter data to a system computer through a telephone exchange (12). *See* FIG. 1, and col. 2, line 8-col. 4, line 10. In response to polling, microcomputer (5) provides in a single frame: a personal identification code, a security code, and data pertaining to the most recent reading of each meter (1a-1e, 2a-2e) connected thereto. *See* col. 3, lines 13-26. Notably, nothing is mentioned of gathering payload data from *other* microcomputers (5), i.e. payload data from *other* meter data collectors (or remote collection units) to consolidate into a single payload, as disclosed and claimed in the subject application.

As will be described in more detail below, as a minimum, neither Belski, Durrant, Partyka, Georget, Brunn, nor Sollinger, disclose, teach, or suggest establishing a preferred

polling sequence based at least in part on inter-node signal strength; returning meter data along a preferred multi-hop communication pathway; an autosequencer to initiate polling to determine a signal strength between host computer and each meter data collector (communication node) or between individual meter data collectors; a raking router or rakingly collecting meter data; a meter data collector database including collector physical address and strength of signal between collectors; combining data from multiple meters into a single data packet; polling a node positioned within a glass housing; and a utility or end-user computer described as having an RF transceiver, each featured in one or more of the claims. There are also other features not mentioned in the cited documents that are featured in the claims, identified below.

No Prima Facie Case of Obviousness

Claims 1-5 and 8-42 are pending. Claims 1-5 and 8-42 are novel and nonobvious. Applicant respectfully submits that the Examiner has not established a *prima facie* case of obviousness. To establish a *prima facie* case of obviousness, at least three basic criteria must be met. First, there must be some suggestion or motivation, either in the prior art references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify or combine the reference or teachings. *See* MPEP 2143. The teaching or suggestion to make the claimed combination and the reasonable expectation of success must not be based on Applicant's disclosure. *See* MPEP 706.02(J). Second, there must be a reasonable expectation of success in modifying or combining references. The mere fact that the prior art may be modified in the manner suggested by the Examiner, however, does not make the modification obvious unless there is some suggestion of the desirability of the modification, the initial burden of which is on the Examiner. *See* MPEP 706.02(J). Finally, the prior art references, as combined, must teach or suggest all the claim elements.

No Motivation to Combine Reference Teachings

Applicant respectfully submits that the Examiner has not met the first element of a *prima facie* case for obviousness. First, there is no explicit suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art,

to modify the reference(s) or to combine reference teachings. The Examiner has the burden of showing, as such, and has not met it here. Nor is there anything implicit suggesting combining the references, as the combined teachings, knowledge of one of ordinary skill in the art, and nature of the problem to be solved, as a whole, would not suggest doing so to those of ordinary skill in the art, as is required in MPEP 2143.01.

For example, Belski recognized that manual water and gas meters had a limited future. *See* col. 2, lines 5-13. Belski sought to solve its problem by integrating the utility meters with an RF transmitter which could pass data to an interface unit or central data box (CDB). *See* col. 4, lines 52-64. Communication between the utility meters (E), (W), (G) and the CDB are via a LAN system employing *low*-power RF spread spectrum technology into their close proximity. *See* col. 5, lines 19-22 and FIG. 3. The CDBs, intern, serve as a gateway for collecting and communicating meter data to a master station via the WAN. *See* col. 5, lines 22-24. One important problem to which Applicant wishes to solve, as identified in Claim 1, is the need to "reduce line-of-site communication problems between each of the plurality of meter data collectors and...host computer." Belski does not concern itself with such problem, and thus, in all actuality, is non-analogies art, which effectively *teaches away* from utilization of a mesh network.

Durrant, on the other hand, recognized problems with access to utility meters, problems with the costs associated with prior automated meter reading systems, and problems with interleaved service suppliers causing a non-contiguous patchwork of customers (*see* col. 2, lines 6-21). Durrant solved its problems use of the formation of an ad hoc network utilizing a *connectionless* protocol. Accordingly, Durrant effectively *teaches away* from actual employment of specific routing during anything other than possibly ad hoc network formation or maintenance.

Partyka was introduced as teaching that central monitoring facility (160) is positioned to determine a preferred communication sequence path, and routing a signal based on signal strength between meter data collectors. Notably, the respective claim(s) instead feature determining the preferred communication sequence path or polling sequence route responsive to a strength of communication signal between a host computer and each of the plurality of meter data collectors.... Nevertheless, as noted previously, nothing in Partyka provides a disclosure,

teaching, or suggestion that the central monitoring facility (160) can or should actually employ the pathway selection techniques employed by its individual collection units (231-i) to either initiate selection or to select a preferred communication sequence path, much less to do so based on strength of signal, as featured. Nor do those techniques employ the determination of a strength of communication signal between collection units, but rather some undefined composite signal quality. *See* col. 9, lines 7-16. Notably, col. 9, lines 16-19 states that "[i]n operation, if the best path is not operative...an alternative path can be selected at each node of the network. Accordingly, Partyka also does not disclose, teach, or suggest utilizing strength of communication signal between nodes in order to allow a preferred polling sequence route to vary over time. Apparently, complete signal failure is required as a prerequisite to re-establish a new communications path. *See* col. 9, lines 16-19. Thus, Partyka effectively *teaches away* from both Applicant's determining of strength of communication signal between nodes and between the host computer in order to first establish a preferred polling sequence route, and from allowing that route to vary over time based on such signal strength determination.

Georget was introduced by the Examiner as teaching an autosequencer. Georget, as noted previously, however, describes a photoelectric type (contactless) optical reading device for optically reading a counting unit (meter quantity) and converting the meter quantity into electrical signals. *See, e.g.*, FIG. 1 and col. 1, line 51-col. 2, line 13. A central station (60) is provided which is electrically connected to multiple local meter interrogation stations (TR) of a remote reading apparatus, connected in cascade. *See* FIG. 1 and col. 2, line 51-col. 3, line 17. Once a single read from one of the local meter interrogation stations (TR) is complete, that station triggers the interrogation of the next station, and so on. *Id.* That is, central station (60) provides a triggering signal which causes a cascade of counting unit reads along the length of the single cascaded electrical circuit. *See also*, col. 8, lines 36-43. Notably, such sequential reading is <u>not</u> that of an autosequencer as disclosed and claimed in the subject application. Applicant's autosequencer, among other things, can initiate polling of the plurality of communication nodes (41) whereby each of a plurality of separate wireless communication nodes (41) (e.g., meter data collectors/remote control units) are individually attempted to be polled by the host computer (61) to determine a strength of [wireless] communication signal between the host computer (61) and

each of the plurality of wireless communication nodes (41) and between wireless communication nodes (41). Georget provides no such disclosure, teaching, or suggestion. Further, by teaching connection of the individual stations (TR) to the central interrogation station (60) via electrical lines (61-63), rather than a wireless communication network, Georget effectively *teaches away* from establishing a wireless communication network.

Sollinger was introduced by the Examiner as teaching such consolidating utility meter data. Sollinger, however, as noted previously, instead describes a utility meter reading and monitoring system including a plurality of scanners (4, 8, 9) each able to optically scan a corresponding plurality of utility meters (sensors) (1a-1e, 2a-2e), a microcomputer (5) in electrical communication therewith, and a telephone communication interface (10) to provide the utility meter data from each of the scanners (4, 8, 9) to a system computer (14) through a telephone exchange (12). *See* FIG. 1, and col. 2, line 8-col. 4, line 10. In response to polling, microcomputer (5) provides in a single frame: a personal identification code, a security code, and data pertaining to the most recent reading of each meter (1a-1e, 2a-2e) connected thereto. *See* col. 3, lines 13-26. Notably, nothing is mentioned of gathering payload data from *other* microcomputers (5), i.e. payload data from *other* meter data collectors (or remote collection units) to consolidate into a single payload, as disclosed and claimed in the subject application. Applicant teaches that at each meter data collector (or remote collection unit) can be configured to collect data from a plurality of utility meters each having a sensor. The claimed "collecting" or raking router concept, however, is different in that it gathers the data from *multiple meter data collectors* into a single data packet (which may or may not include data from multiple utility meters separately associated with the individual meter data collectors), and not just from multiple utility meters (sensors). This is an important feature, which can help reduce network congestion, that is not disclosed, taught, or suggested by Sollinger. Further, by teaching use of a telephone line (11), rather than a wireless communication network, Sollinger effectively *teaches away* from establishing a wireless communication network.

Thus, the combined teachings, knowledge of one of ordinary skill in the art, and nature of the problem to be solved, as a whole, do not suggest combining these references, as the combination would not solve the Applicant's problems or provide Applicant's solutions.

Second, the Examiner's statements, alone, for example, that it would have been obvious to "modify the automated meter reading network system of Belski et al., by incorporating the plurality of meter data collectors...because Durrant et al. discloses a meter reading network system and method that employs software control communication protocols...," or that it would have been obvious to "modify the combination of Belsky et al., Burnn et al., by incorporating the initiating of the polling by the host... because Partyka discloses determining a strength of communication signal between the host computer and each of the plurality of meter data collectors..." is insufficient to establish a *prima facie* case of obviousness, even assuming the combination would actually solve the problems (which Applicant contends it would not for reasons described below) and even if these documents provided such teachings, which Applicant contends they did not. Even assuming the cited documents teach what the Examiner contends, a motivation, and an ability to combine the references (which Applicant respectfully submits has not been shown), MPEP 2143.01III states the "fact that references can be combined or modified does not render the resultant combination obvious unless the prior art also suggests the *desirability* of the combination." (Emphasis added). Neither of these documents suggest such desirability. Nor do the problems faced by Belski, Durrant, or Partyka indicate such desirability. Belski was clearly interested in low-power transmissions between its utility meters and its gateway CDBs. Assuming the Belski CDBs, explicitly described as performing a gateway function, could somehow be equated with the Durrant gateway (208), the combination of reference teachings, which arguably would result in requirements for less CDBs, would also result in a much less secure system and much more distributed utility meters requiring additional hardware and much higher power transmission capabilities to form an ad hoc network to relay meter data of adjacent utility meters to a nearby CDB for transmission across the WAN to the master station. If the Belski CDBs are equated with the Durrant devices (100), the Belski network would have to be completely restructured. Along the same lines, Durrant was instead focused on providing an ad hoc network employing a *connectionless* (non-routing) protocol (which is entirely opposite Applicant's preferred polling sequence path approach to retrieving utility usage data), and Partyka was instead interested in a *node centric* approach to delivering alarm signals to a network interface unit (which is entirely opposite Applicant's host centric

approach to utility meter reading). I.e., none of these documents were or are applicable to Applicant's claimed embodiments.

Still further, Applicant respectfully submits that the Examiner has overlooked an important point that the motivation to combine references must be to produce a "proposed modification of the applied reference(s) necessary to arrive at the claimed subject matter." *See* MPEP 706.02(j). As noted above, and as will be described in more detail below, neither Belski, Durrant, nor Partyka, individually or collectively, disclose, teach, or suggest, for example, establishing a preferred polling sequence path based on inter-node signal strength, along with many other novel and nonobvious features, each provided in one or more of the claims.

Although the Examiner again states that Durrant teaches "polling by a host computer and the transmission of meter data collectors being over a preferred polling sequence route that is responsive to the strength of communication signal because Durrant et al., discloses a meter reading network system and method that employs software control communication protocols, that poll's the meter data collectors based on a table that specify a polling sequence route...." As indicated in col. 5, lines 40-43 and col. 7, lines 60-67, no preferred route, much less a preferred polling sequence is utilized during actual employment. Notably, the un-cited passages that the Examiner refers to as teaching *transmission* over a preferred polling sequence route only relate to initial establishment of the ad hoc network, and not data retrieval, which is accomplished using a connectionless protocol (no dedicated path). Nor does it establish or update such route based on strength of communication signal.

Along the same lines, the un-cited passages of Partyka that the Examiner refers to as teaching polling of meter data collectors by a host computer to determine a strength of communication signal, only describe *transmitting* a query to a selected telemetry collection unit (231-i) along a "best path" based on an un-defined composite signal quality, which apparently is determined by the individual telemetry collection units (231-i), and not by a host computer. Further, Partyka does not actually teach using the determined path, whether it be from the collection unit (231-i) to the central monitoring facility (160), or vice versa. Once the transmission was made beyond the first adjacent telemetry collection unit (231-i), the signal need not adhere to a predetermined path dictated by the sending unit. *See* col. 9, lines 16-21 (stating

that if the best path is nonoperative, and alternative path can be selected at each node of the network to ensure the message reaches the terminating (destination) node). The central monitoring facility (160) has no positive control of a polling sequence path. Accordingly, Partyka provides no such disclosure, teaching, or suggestion.

Correspondingly, neither of these documents, even when combined with the knowledge of one skilled in the art, provide the necessary motivation to combine reference teachings or modify Belski to somehow arrive at the claimed embodiments of the invention; and each of these documents alone, and in combination, fails to teach or suggest the claimed embodiments of the invention. It is only through using Applicant's disclosure, used as a roadmap, that one would try to combine these documents to try to "build" the claimed embodiments of the Applicant's invention. Therefore, Applicant respectfully submits that the first element of a *prima facie* case of obviousness has not been satisfied, and for this reason, the claimed embodiments of the invention are novel, non-obvious, and define over the cited documents.

No Reasonable Expectation of Success

As will be described in more detail below, even if there were a motivation to combine the teachings of the cited documents (which Applicant contends there is not), and even if the cited documents could be combined, neither document nor the hypothetical combination, discloses, teaches, or suggests the various features such as: establishing a preferred polling sequence based at least in part on inter-node signal strength; returning meter (utility usage) data along a preferred multi-hop communication pathway; an autosequencer to initiate polling to determine a signal strength between host computer and each meter data collector or between individual meter data collectors; a raking router or rakingly collecting meter data; etc., each featured in one or more of the claims. Additionally, as noted above, while some of the cited documents teach a wireless communication network configuration, in direct contrast, others teach that such configuration should instead be a wireline network configuration. As such, there is no reasonable expectation of success that the proposed combination would produce the claimed subject matter. Correspondingly, the second element of a *prima facie* case of obviousness has not been satisfied,

and for this reason as well, the claimed embodiments of the invention are novel, non-obvious, and define over the cited documents.

The Cited Documents Do Not Teach or Suggest All the Claim Elements

Applicant respectfully submits that neither Belski, Durrant, Partyka, Georget, Brunn, nor Sollinger, alone or in combination, disclose, teach or suggest all of the elements of the claimed embodiments of the present invention.

Claims 26-30 Are Novel and Nonobvious

The Examiner has rejected Claims 26-30 under U.S.C. § 103(a) as being unpatentable over Belski in view of Durrant. Neither Belski, Durrant, or either of the other cited documents disclose, teach, or suggest all elements of these claimed embodiments. Independent Claim 26 features, for example, "polling each of the plurality of meter data collectors by the remote host computer with the preferred polling sequence by the host computer positioned remote from the plurality of meter data collectors."

The Examiner on page 5, para. 11, lines 5-7 of this Office Action (citing Belski col. 5, lines 32-41; and col. 12, lines 36-67) indicated Belski teaches determining a polling sequence of a communication signal between remote host computer and a plurality of meter data collectors. Applicant respectfully submits that the Examiner is mistaken. Referring to Belski FIG. 3 and col. 6, lines 20-23, the E^{CDB} and CDB ("*gateways*") are positioned in direct communication with the WAN and are not disclosed, taught, or suggested as being capable of wireless communication either with the main utility or with other E^{CDB} and CDBs. *See* FIG. 3 and col. 6, lines 20-23. Nor do utility meters (E), (G), (W) communicate with each other. Further, each utility meter (E), (G), (W) is only disclosed as being one hop away from the E^{CDB} and CDB gateways. Thus, as Belski does not teach anything other than one-on-one direct communication, Belski could not teach polling multiple meter data collectors along a polling sequence route.

Nevertheless, in paraphrase, the Examiner then states on page 6 that there would be motivation to combine reference teachings because Durrant employs a software control communication protocol that polls its devices (100) based on a table that specifies a polling route. Even assuming there could somehow be motivation to employ all the extensive hardware

and software modifications necessary to turn Belski into a multi-hop network, which it currently is not, and that Durrant performs polling operations, which Applicant contends it does not, Durrant simply does not provide a teaching of determining (through such polling) a preferred communication pathway from devices (100) to central gateway (208) or the ultimate destination, or providing such route to the devices (100) for returning data. Instead, and as perhaps best shown in Durrant FIG. 6 and described in col. 9, lines 10-28, the devices (100) perform a series of one hop transfers to each device (100) within transmission range of the transmitting device (100) that is a next hop to the gateway (208), until such data arrives at the gateway (208). Durrant teaches that during operation, a connectionless protocol is used between sender and receiver--i.e., there is no dedicated path between sender and receiver. *See* col. 5, lines 41-43.

Further, Independent Claim 26 also features, "transmitting meter utility usage data to the remote host computer from each of the plurality of meter data collectors along the *same* preferred polling sequence route responsive to the polling by the host computer." No such teaching is provided by either Belski, Durrant, or any of the other cited documents.

Still further, Independent Claim 26 also features determining the preferred polling sequence route responsive to a strength of communication signal between the host computer and each of the plurality of meter data collectors (*inter-device communication signal strength*). Notably, Durrant says nothing with respect to selecting a route between its meter reading application or gateway (208) and either of its devices (100) from among multiple suitable routes based on signal strength. Nor does the Examiner state such or provide such reference passage, except in his conclusion. For the reasons stated above, Durrant does not have, and therefore cannot teach, such important feature, which helps ensure that the "preferred" communication path is optimally robust, and not merely the first one generated. As such, Independent Claim 26 has further been shown to be novel and nonobvious and define over the cited documents.

These features, provided in Independent Claim 26, and not taught by either of the cited documents, are important as they not only help solve Applicant's primary problem, they also overcome Durrant's congestion problems resulting from multiple data packets containing the same information arriving at the same gateway. Further, such features enhance determining if a meter data collector has dropped off-line, without necessarily having to request data from the

affected meter. This would not be the case if one were to employ either the Durrant system or the Belski system as modified by Durrant, if such modification were possible. As such, Independent Claim 26 has been shown to be novel and nonobvious and define over the cited documents.

Claims 1-5, 7-20, 26-32, and 35-42 Are Novel and Nonobvious

The Examiner rejected Claims 1-5, 7-15, and 17-20, as being unpatentable over Belski in view of Partyka; Claims 6-7 (now incorporated into Claim 1) and 16-17, as being unpatentable over Belski in view of Partyka and further in view of Georget; and Claims 26, 27-30, 31-32, 35, 37-42, as being unpatentable by analogy with respect to the subject matter disclosed in Claims 1-20.

Independent Claim 1 features, for example, "a host computer...including network software... to perform the operations of determining a preferred polling sequence route responsive at least in part to a *strength of communication signal*..., sending a message packet including routing data to route the message packet along the preferred polling sequence route..., the message packet collecting strength of communication signal data...[and] including an autosequencer [of the network software of the *host computer*] positioned to initiate systematic polling of the plurality of meter data collectors..., the autosequencer further positioned to determine a communication sequence to each of the plurality of meter data collectors responsive to the strength of communication signal... and to *update* the preferred polling sequence route responsive to strength of communication signal data gathered by each message packet after each subsequent polling sequence to allow the preferred polling sequence route to vary over time." Such features are not disclosed, taught, or suggested by the cited documents.

The shortcomings of Belski were described above. Further, the Examiner explicitly states that "Belski et al., does not disclose each of the plurality of meter data collectors being adapted to communicate with meter data collectors in the communication network, and [a host computer] positioned to determine a preferred polling sequence route responsive at least in part to a strength of communication signal between the host computer and each of the plurality of meter data collectors, and positioned to determine a respective preferred communication sequence path to

the host computer for each respective polled meter data collector...." That is, Belski teaches nothing more than a conventional non-mesh network system.

Partyka was introduced as teaching that central monitoring facility (160), which the Examiner equates with a host computer, is positioned to determine a preferred communication sequence path, and routing a signal based on signal strength between meter data collectors. Notably, the respective claim(s) *instead* feature determining the preferred communication sequence path or polling sequence route responsive to a strength of communication signal between a host computer and each of the plurality of meter data collectors.... As noted previously, nothing in Partyka provides a disclosure, teaching, or suggestion that the central monitoring facility (160) can or should actually employ the pathway selection techniques employed by its individual collection units (231-i) to either initiate selection or to select a preferred communication sequence path, much less to do so based on strength of signal, as featured in the claims. *See* col. 9, lines 59-65 (stating only that "the same methods of *transmission* [(not path selection)]...can be used to carry messages in the opposite direction...") (emphasis added). Nor do those techniques employ a determination of a strength of communication signal between collection units, but rather some undefined composite signal quality along an entire pathway. *See* col. 9, lines 7-16.

The un-cited passages of Partyka that the Examiner refers to as teaching polling of meter data collectors by a host computer to determine a strength of communication signal, col. 9, lines 59-65, only describe *transmitting* a query to a selected telemetry collection unit (231-i) along a "best path" based on an un-defined composite pathway signal quality, which apparently was determined by the individual telemetry collection units (231-i), and not a host computer. That is, Partyka does not disclose, teach, or suggested a host computer determining or initiating a determination of a pathway to a selected telemetry collection unit (231-i).

Further, Partyka does not actually even teach using a "best" path, whether or not it be determined from the collection unit (231-i) to the central monitoring facility (160), or vice versa. Once the transmission was made beyond the first adjacent telemetry collection unit (231-i), the signal need not adhere to the predetermined path. *See* col. 9, lines 16-19 (stating that "[i]n operation, if the best path is not operative...an alternative path can be selected at each node of the

network of the network to ensure the message reaches the terminating (destination) node"). As such, Partyka also does not disclose, teach, or suggest utilizing strength of communication signal between nodes in order to allow a preferred polling sequence route to vary over time. Apparently, complete signal failure is required as a prerequisite to re-establish a new communications. *See* col. 9, lines 16-19.

Accordingly, the central monitoring facility (160) has no positive control of a polling sequence path. Thus, Partyka not only does not teach Applicant's methodology, but effectively *teaches away* from determining of strength of communication signal between nodes and between the host computer in order to first establish a preferred polling sequence route or to allow that route to vary over time based on such a continuous signal strength determination.

Georget was introduced by the Examiner as teaching an autosequencer which was featured in now canceled Claims 6 and 7 and incorporated into amended Claim 1. Georget, as noted previously, however, describes a photoelectric type (contactless) optical reading device for optically reading a counting unit (meter quantity) and converting the meter quantity into electrical signals. *See, e.g.*, FIG. 1 and col. 1, line 51-col. 2, line 13. A central station (60) is provided which is electrically connected to multiple local meter interrogation stations (TR) of a remote reading apparatus, connected in cascade. *See* FIG. 1 and col. 2, line 51-col. 3, line 17. Once a single read from one of the local meter interrogation stations (TR) is complete, that station triggers the interrogation of the next station, and so on. *Id.* That is, central station (60) provides a triggering signal, which causes a cascade of counting unit reads along the length of the single cascaded electrical circuit. *See also*, col. 8, lines 36-43. Notably, such sequential reading is not that of an autosequencer as disclosed and claimed in the subject application. Applicant's autosequencer, among other things, can initiate polling of the plurality of communication nodes (41) whereby each of a plurality of separate wireless communication nodes (41) (e.g., meter data collectors/remote control units) are individually attempted to be polled by the host computer (61) to determine a strength of [wireless] communication signal between the host computer (61) and each of the plurality of wireless communication nodes (41) and between wireless communication nodes (41). Accordingly, Georget, alone or in combination with the other cited documents, provides no such disclosure, teaching, or suggestion. Further, by teaching connection of the

individual stations (TR) to the central interrogation station (60) via electrical lines (61-63), rather than a wireless communication network, Georget effectively *teaches away* from establishing a wireless communication network.

Independent Claim 11 features, for example, "a host computer... positioned to determine a respective preferred multi-node communication sequence path between the host computer and a selected meter data collector. In this regard, the shortcomings of Belski and Partyka were described above with reference to Independent Claim 1. Further, Independent Claim 11 features that the host computer is "positioned to send a message packet...configured to rakingly collect respective utility usage data from both the destination node and the at least one intermediate routing node located along [a] preferred communication sequence path so that utility usage data is collected by the message packet from *both* the destination node and the at least one intermediate routing node along the preferred communication sequence path for delivery to the host computer."

Sollinger was introduced by the Examiner as teaching such consolidating utility meter data. Sollinger, however, as noted previously, instead describes a utility meter reading and monitoring system including a plurality of scanners (4, 8, 9) each able to optically scan a corresponding plurality of utility meters (sensors) (1a-1e, 2a-2e), a microcomputer (5) in electrical communication therewith, and a telephone communication interface (10) to provide the utility meter data from each of the scanners (4, 8, 9) to a system computer (14) through a telephone exchange (12). *See* FIG. 1, and col. 2, line 8-col. 4, line 10. In response to polling, microcomputer (5) provides in a single frame: a personal identification code, a security code, and data pertaining to the most recent reading of each meter (1a-1e, 2a-2e) connected thereto. *See* col. 3, lines 13-26. Notably, nothing is mentioned of gathering payload data from *other* microcomputers (5), i.e. payload data from *other* meter data collectors (or remote collection units) to consolidate into a single payload, as disclosed and claimed in the subject application. Applicant teaches that at each meter data collector (or remote collection unit) can be configured to collect data from a plurality of utility meters each having a sensor. The claimed "collecting" or raking router concept, however, is different in that it gathers the data from *multiple meter data collectors* into a single data packet (which may or may not include data from multiple utility

meters separately associated with the individual meter data collectors), and not just from multiple utility meters (sensors). This is an important feature, which can help reduce network congestion, that is not disclosed, taught, or suggested by Sollinger. Further, by teaching use of a telephone line (11), rather than a wireless communication network, Sollinger effectively *teaches away* from establishing a wireless communication network.

Independent Claims 26, 31, 35, and 37 were rejected by analogy based on the rejection of Claims 1-20. As noted previously, Independent Claim 26 features, for example, "determining by a remote host computer a preferred polling sequence route responsive to a *strength of communication signal* between a remote computer and each of a plurality of meter data collectors"; and "transmitting meter utility usage data to the remote host computer from each of the plurality of meter data collectors along the same preferred polling sequence route responsive to the polling by the host computer." The shortcomings of Belski and Durrant were described above, with respect to Claims 26-30, and the shortcomings of Partyka were described immediately above, with respect to Independent Claim 1. Claim 26 further features that the meter utility usage data is transmitted along "the *same* preferred polling sequence route responsive to the polling by the host computer." This important feature designed to further reduce network congestion is also not disclosed, taught, or suggested in any of the cited documents.

Independent Claim 31, for example, features "transmitting the utility usage data to a router of a communication network service provider along a predetermined multi-hop communication sequence path responsive to a *request* by a requesting computer device *provided in a data packet*, the data packet including routing data to route the utility usage data along a *specific route provided by the requesting computer device*." Neither of the cited documents disclose, teach, or suggest such features for the reasons described above.

Independent Claim 35, for example, features "polling the remote collection unit *from* a host computer by radiofrequency data communication through the glass facing; the polling including sending a message packet including a preferred polling sequence route"; or "transmitting the collected utility meter data from the remote collection unit through the glass facing to the host computer *along the preferred sequence route provided in the message packet*

by the host computer." Neither of the cited documents disclose, teach, or suggest such features for the reasons described above.

Independent Claim 37, for example, features "polling each of the plurality of remote collection units along a preferred polling sequence route from a collection computer positioned remote from the plurality of remote collection units," and "transmitting meter data from *each* of the plurality of remote collection units to the collection computer along a *same* preferred polling sequence route provided in a message packet by the host computer responsive to the polling." Neither of the cited documents disclose, teach, or suggest such features for the reasons described above.

Therefore, Applicant respectfully submits that the third element of a *prima facie* case of obviousness has not been satisfied with respect to Independent Claims 1, 11, 26, 31, 33, 35, and 37. Accordingly, in view of the lack of motivation to combine the cited documents, lack of a reasonable expectation of success in developing claimed embodiments of the Applicant's invention even using Applicant's specification as a roadmap to do so, and a lack of teaching or suggestion of each and every element of each independent claim, Applicant respectfully submits that Independent Claims 1, 11, 26, 31, 33, 35, and 37 are novel, nonobvious and patentable over the cited documents.

The dependent Claims 2-10, 12-20, 27-30, 32, 36, and 38-42, have therefore also been shown to be allowable because their corresponding independent claims have been shown to be novel and non-obvious. Nevertheless, the dependent claims include independent novelty.

For example, Claims 2 and 12 were rejected over Belski in view of Partyka. Neither of the cited documents, however, disclose, teach, or suggest a collector controller for meter data collector position to add utility usage data to the payload data section of a message packet responsive to routing data.

Claims 3 and 13 were rejected over Belski in view of Partyka. Neither of the cited documents, however, disclose, teach, or suggest central monitoring facility (160), which the Examiner equates with a host computer, as having an RF transceiver as featured in the claims. The Applicant has reviewed the passages cited by the Examiner (col. 5, lines 26-31), but was unable to identify such disclosure, teaching, or suggestion.

Claims 4 and 14 were rejected over Belski in view of Partyka. Neither of the cited documents, however, disclose, teach, or suggest routing a message packet through a communication network to a destination node to collect the utility usage data through the communication network *from* at least one of the [intermediate] nodes along the preferred polling sequence route to the destination node.

Claims 5 and 15 were rejected over Belski in view of Partyka. Neither of the cited documents, however, disclose, teach, or suggest the inter-meter data collector transmission frequency continuously changes between a different one of a plurality of preselected frequencies between complete data packet transmissions between meter data collectors. Partyka discloses that each telemetry transmitter (221-i-i) can transmit an alarm condition for a predetermined number of times using a plurality of predetermined alarm frequencies such that the transmission frequency is changed after each single packet transmission according to a predetermined fixed sequence. *See* col. 11, line 50-col. 12, line 12. Partyka does not, however, disclose teach or suggest collection units (230-i), which the Examiner equates as meter data collectors, either are or can be so configured. In fact, Partyka specifically features away from such configuration due to a greater transmission overhead. *See* col. 12, lines 2-12 (stating that "the transmission of the alarm packet [by transmitters (221-i-i)] is repeated a predetermined number of times using a plurality of predetermined alarm frequencies.... The essence of the idea is that the alarm messages [transmitted by transmitters (221-i-i)] being infrequent can afford a much greater transmission overhead and can be repeated several times.").

Claims 8, 18, 28 were rejected over Belski in view of Partyka. Neither of the cited documents, however, disclose, teach, or suggest a raking router or rakingly collecting meter data as featured in the claims. The Applicant has reviewed the passages cited by the Examiner including col. 5, line 55-col. 6, line 6; col. 8, line 12-col. 10, line 50), but was unable to identify such disclosure, teaching, or suggestion. Rakingly collecting utility usage data from multiple meter data collectors via polling a single meter data collector is an important feature which can function to reduce network congestion, that is not disclosed, taught, or suggested in either of the cited documents. Note, Claims 32 and 42 are novel and nonobvious under similar reasoning.

Claims 10, 20, and 30 were rejected over Belski in view of Partyka. Neither of the cited documents, however, disclose, teach, or suggest a meter data collector database including collector physical address *and* strength of signal between collectors, as featured in the claims. The Applicant has reviewed the passages cited by the Examiner (Partyka abstract and col. 5, lines 16-31), along with the other portions of the document, but was unable to identify such disclosure, teaching, or suggestion. Having both collector physical address and strength of signal between collectors is an important feature, which allows for enhanced analysis of the network topography. I.e., Does the strength of signal between specific pairs of meter data collectors coincide with the physical distance between those pairs?

Claims 16-17 were rejected over Belski in view of Partyka and further view of Georget. As described with respect to Claim 1, neither of the cited documents, nor the hypothetical combination, disclose, teach, or suggest an autosequencer associated with network software located on a *host computer* to initiate polling to determine a signal strength between host computer and each meter data collector or between individual meter data collectors, as featured in the claims. Georget was introduced by the Examiner as teaching an autosequencer. Georget, as noted previously, however, describes a photoelectric type (contactless) optical reading device for optically reading a counting unit (meter quantity) and converting the meter quantity into electrical signals. *See, e.g.*, FIG. 1 and col. 1, line 51-col. 2, line 13. A central station (60) is provided which is electrically connected to multiple local meter interrogation stations (TR) of a remote reading apparatus, connected in cascade. *See* FIG. 1 and col. 2, line 51-col. 3, line 17. Once a single read from one of the local meter interrogation stations (TR) is complete, that station triggers the interrogation of the next station, and so on. *Id.* That is, central station (60) provides a triggering signal which causes a cascade of counting unit reads along the length of the single cascaded electrical circuit. *See also*, col. 8, lines 36-43. Notably, such sequential reading is not that of an autosequencer as disclosed and claimed in the subject application. Applicant's autosequencer, among other things, can initiate polling of the plurality of communication nodes (41) whereby each of a plurality of separate wireless communication nodes (41) (e.g., meter data collectors/remote control units) are individually attempted to be polled by the host computer (61) to determine a strength of [wireless] communication signal between the host computer (61) and

each of the plurality of wireless communication nodes (41) and between wireless communication nodes (41). Accordingly, Georget, alone or in combination with the other cited documents, provides no such disclosure, teaching, or suggestion. Further, by teaching connection of the individual stations (TR) to the central interrogation station (60) via electrical lines (61-63), rather than a wireless communication network, Georget effectively *teaches away* from establishing a wireless communication network.

Correspondingly, dependent Claims 2-10, 12-20, 27-30, 32, 36, and 38-42, have been shown to be novel and nonobvious and define over the cited documents.

Claims 21-25 Are Novel and Nonobvious

The Examiner rejected Claims 21-23 as being unpatentable over Belski in view of Burnn; and Claims 24 and 25 as being unpatentable over Belski in view of Burnn and further in view of Partyka and further in view of Georget. Independent Claim 21 features, for example, a memory including network software to receive a message packet including a payload section carrying utility usage data from *at least one other meter data collector*, to combine the local utility usage data with the utility usage data from the at least one other meter data collector, and to communicate the utility usage data remotely through the communication network to the requesting remote host computer *along a route determined by the requesting remote host computer*. Applicant respectfully submits that for the reasons discussed previously, and for the reasons to be discussed with respect to Independent Claim 33, below, neither of the cited documents provide such disclosure, teaching, or suggestion.

Accordingly, in view of the lack of motivation to combine the cited documents (described previously), lack of a reasonable expectation of success in developing claimed embodiments of the Applicant's invention, and lack of teaching or suggestion of each and every element of each independent claim, Applicant respectfully submits that Independent Claim 21 is novel, nonobvious and patentable over the cited documents. The dependent Claims 22-25 have, therefore, also been shown to be allowable because their corresponding independent claim has been shown to be novel and non-obvious. Nevertheless, the dependent claims include independent novelty.

For example, as noted previously Claim 23 was rejected over Belski. Belski, however, does not disclose, teach, or suggest frequency hopping over the network. As perhaps best described in col. 24, lines 5-21, interface device (E^{CDB} or CDB), which the Examiner equates to Applicant's meter data collector, collects meter data from multiple meters (E, G, W) each having RF transmitters, which use a spread spectrum frequency-hopping algorithm to transmit the data to interface device (E^{CDB} or CDB). Notably, meters (E, G, W) do not communicate with each other, and thus, inherently *teach away* from employment of a mesh network. Further, each interface device (E^{CDB} or CDB) transmits the received meter data via a "conventional" carrier wave or signal transmission device (e.g., telephone, digital or analog cellular, two-way paging, IP addressable Internet access, or broadband modems) to a master station associated with a utility. I.e., they do not employ frequency hopping as part of their communication scheme back to the host utility. Accordingly, Belski does not disclose, teach, or suggest polling of a meter data collector by a remote *host* computer through such frequency hopping, which Belski does not teach, much less doing so through a multiple-interface device (E^{CDB} or CDB) communication network, which Belski also does not teach. By analogy with Partyka, a teaching downstream of network communication nodes (E^{CDB} or CDB), i.e., directly with the individual local meters (or alarm units) being serviced by the communication nodes (E^{CDB} or CDB), is not a teaching upstream of such nodes, which may require significantly different software and hardware applications. Although Belski is silent on the subject because it does not teach a wireless mesh network or other multi-node cross communication network, and thus, need not deal with the same type of collision problems or interference, Partyka is explicit--indicating that the downstream transmissions between nodes (230-i) with the alarm units (221-i-i), rather than the upstream transmissions, can afford the greater transmission overhead. *See* Partyka, col. 12, lines 7-12.

Claims 24-25 were rejected over Belski in view of Brunn and further view of Partyka and in further view of Georget. Neither of the cited documents, nor the hypothetical combination, however, disclose, teach, or suggest an *autosequencer* of a host computer positioned to initiate polling *to determine a signal strength* between host computer and each meter data collectors or between individual meter data collectors as featured in the claims. As noted previously, nothing

in Partyka provides a disclosure, teaching, or suggestion that the central monitoring facility (160) can or should actually employ the pathway selection techniques employed by its individual collection units (231-i) to either initiate selection or to select a preferred communication sequence path, much less to do so based on strength of communication signal, as featured. *See* Partyka, col. 9, lines 59-65 (stating only that "the same methods of *transmission* [(not path selection)]...can be used to carry messages in the opposite direction...") (emphasis added). Nor do those techniques employ a determination of a strength of communication signal between collection units, but rather some undefined composite signal quality. *See* Partyka, col. 9, lines 7-16. Further, Georget does not fill in the gaps. Georget, as noted previously, describes a photoelectric type (contactless) optical reading device for optically reading a counting unit (meter quantity) and converting the meter quantity into electrical signals. *See, e.g.*, Georget FIG. 1 and col. 1, line 51-col. 2, line 13. A central station (60) is provided which is electrically connected to multiple local meter interrogation stations (TR) of a remote reading apparatus, connected in cascade. *See* FIG. 1 and col. 2, line 51-col. 3, line 17. Once a single read from one of the local meter interrogation stations (TR) is complete, that station triggers the interrogation of the next station, and so on. *Id.* That is, central station (60) provides a triggering signal, which causes a cascade of counting unit reads along the length of the single cascaded electrical circuit. *See also*, col. 8, lines 36-43. Notably, such sequential reading is not that of an autosequencer as disclosed and claimed in the subject application. Applicant's autosequencer, among other things, can initiate polling of the plurality of communication nodes (41) whereby each of a plurality of separate wireless communication nodes (41) (e.g., meter data collectors/remote control units) are individually attempted to be polled by the host computer (61) to determine a strength of [wireless] communication signal between the host computer (61) and each of the plurality of wireless communication nodes (41) and between wireless communication nodes (41). Accordingly, Georget, alone or in combination with the other cited documents, provides no such disclosure, teaching, or suggestion. Further, by teaching connection of the individual stations (TR) to the central interrogation station (60) via electrical lines (61-63), rather than a wireless communication network, Georget effectively *teaches away* from establishing a wireless communication network.

Correspondingly, in accordance with the discussion above, Claims 21-25 have been shown to be novel and nonobvious and define over the cited documents.

Claims 33-34 Are Novel and Nonobvious

The Examiner rejected Claims 33-34 as being unpatentable over Belski in view of Partyka and further in view of Sollinger. Independent Claim 33 features, for example, "consolidating the utility meter data of [a] first remote collection unit with the utility meter data of the second remote collection unit into a *same* data payload; and transmitting the utility meter data of the first remote collection unit *and* the utility meter data of the second remote collection unit from the second remote collection unit to a host computer." Applicant respectfully submits that neither of the cited references provide such disclosure, teaching, or suggestion.

The shortcomings of Belski and Partyka were discussed previously. Further, the Examiner correctly indicated on page 24 of this Office Action that the combination of Belski and Partyka do not disclose a method comprising consolidating the utility meter data of a first remote collection unit with the utility meter data of a second remote collection unit into a same data payload. Sollinger was introduced by the Examiner as teaching such consolidating of utility meter data. Sollinger, however, as noted previously, instead describes a utility meter reading and monitoring system including a plurality of scanners (4, 8, 9) each able to optically scan a corresponding plurality of utility meters (sensors) (1a-1e, 2a-2e), a microcomputer (5) in electrical communication therewith, and a telephone communication interface (10) to provide the utility meter data from each of the scanners (4, 8, 9) to a system computer (14) through a telephone exchange (12). *See* FIG. 1, and col. 2, line 8-col. 4, line 10. In response to polling, microcomputer (5) provides in a single frame: a personal identification code, a security code, and data pertaining to the most recent reading of each meter (1a-1e, 2a-2e) connected thereto. *See* col. 3, lines 13-26. Notably, nothing is mentioned of gathering payload data from *other* microcomputers (5), i.e., payload data from *other* meter data collectors (or remote collection units) to consolidate into a single payload, as disclosed and claimed in the subject application. Applicant teaches that at each meter data collector (or remote collection unit) can be configured to collect data from a plurality of utility meters each having a sensor. The claimed "collecting" or

raking router concept, however, is different in that it gathers the data from *multiple meter data collectors* into a single data packet (which may or may not include data from multiple utility meters separately associated with the individual meter data collectors), and not just from multiple utility meters (sensors). This is an important feature, which can help reduce network congestion, that is not disclosed, taught, or suggested by Sollinger. Further, by teaching use of a telephone line (11), rather than a wireless communication network, Sollinger effectively *teaches away* from establishing a wireless communication network.

Accordingly, in view of the lack of motivation to combine the cited documents (described previously), lack of a reasonable expectation of success in developing claimed embodiments of the Applicant's invention, and lack of teaching or suggestion of each and every element of each independent claim, Applicant respectfully submits that Independent Claim 33 (and Claim 21) is novel, nonobvious and patentable over the cited documents. The dependent Claim 34 has, therefore, also been shown to be allowable for the same reasons as that of Claim 33.

In commenting upon the references and in order to facilitate a better understanding of the differences that are expressed in the claims, certain details of distinction between the cited documents and the claimed embodiments of the present invention have been mentioned, even though such differences do not appear in all of the claims. It is not intended by mentioning any such unclaimed distinctions to create any implied limitations in the claims. Not all of the distinctions between the cited documents and the claimed embodiments of Applicant's present invention have been made by Applicant. For the foregoing reasons, Applicant reserves the right to submit additional evidence showing the distinctions between claimed embodiments of Applicant's invention to be nonobvious in view of the cited documents.

The foregoing remarks are intended to assist the Examiner in re-examining the application and in the course of explanation may employ shortened or more specific or variant descriptions of some of the claim language. Such descriptions are not intended to limit the scope of the claims; the actual claim language should be considered in each case. Furthermore, the remarks are not to be considered to be exhaustive of the facets of the claimed embodiments of the invention that render it patentable, being only examples of certain advantageous features and differences that Applicant's attorney chooses to mention at this time.

CONCLUSION

In view of the amendments and remarks set forth herein, Applicant respectfully submits that the Application is in condition for allowance. Accordingly, the issuance of a Notice of Allowance in due course is respectfully requested.

Respectfully submitted,

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